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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/370,770	08/09/1999	JUSTIN CHE-I CHUANG	2685/5259	8481

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EXAMINER

LUGO, DAVID B

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/370,770

Applicant(s)

CHUANG ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 7 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Marchetto et al. U.S. Patent 5,914,959.

Regarding claim 1, Marchetto teaches a digital communications system having an automatically selectable transmission rate where the receiver stores a look-up table listing acceptable threshold values (N values) corresponding to each available constellation bit rate (see column 5 lines 11-13). Marchetto further teaches measuring a signal quality at the receiver (see Fig. 2) and states that the look-up table is searched in order to find an acceptable data rate for transmission where the modulation scheme is adjusted based on the data rate selected (see column 5 lines 39-53).

Regarding claim 7, Marchetto further states that a back-off signal can be transmitted to the transmitter to cause retransmission of the received signal at the next lower bit rate (see column 5 lines 21-25).

Regarding claim 13, Marchetto teaches a digital communications system having an automatically selectable transmission rate where the receiver stores a look-up table (LUT) listing acceptable signal quality values for each available constellation bit rate. Marchetto further teaches that the maximum data rate can be determined by searching the LUT in decreasing order until an acceptable signal quality value is located, as described in column 5 lines 39-53.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 5, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchetto et al. in view of Schramm et al. U.S. Patent 6,208,663.

Regarding claims 2 and 14, Marchetto teaches a digital communications system having an automatically selectable transmission rate as described above, but fails to expressly teach that a throughput function is determined using at least a radio interference value and a block error rate value.

Schramm teaches a method for block ARQ with reselection of coding and modulation where a coding/modulation scheme is selected based upon an evaluation of the system including

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carrier-to-interference (C/I) or carrier-to-noise (C/N) estimates, bit error rate (BER), received signal strength, etc. which lead to increased throughput, as described in column 8 lines 4-42.

It would have been obvious to one of ordinary skill in the art to use the teachings of Schramm where an evaluation of the system is made using interference and error rate values in the communications system of Marchetto to achieve increased throughput and decreased delay.

Regarding claim 3, Marchetto further teaches that the maximum data rate can be determined by searching the LUT in decreasing order until an acceptable signal quality value is located, as described in column 5 lines 39-53.

Regarding claims 5 and 15, Marchetto fails to expressly disclose that the signal quality value is one of a signal to interference ratio and a block error rate.

Schramm teaches the selection of a coding/modulation scheme based on channel characteristics including C/I or C/N estimates, bit error rate (BER), received signal strength, etc.

It would have been obvious to one of ordinary skill in the art to use the teachings of Schramm in the communications system of Marchetto to achieve increased throughput and decreased delay.

5. Claims 4, 8-12, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchetto et al. in view of Jacobsmeier U.S. Patent 5,541,955.

Regarding claim 4, Marchetto teaches a digital communications system having an automatically selectable transmission rate as described above, but fails to expressly teach that when the signal quality is less than a no-transmission value, transmission is ceased until the signal quality value exceeds the no-transmission threshold value.

Jacobsmeier teaches an adaptive data rate device for transmitting data over fading communications channels where a STOP command is used to halt communications when the signal-to-noise ratio falls below a minimum threshold required for reliable communications until the channel again becomes available for message traffic (see column 18 lines 27-36).

It would have been obvious to one of ordinary skill in the art to use the teaching of stopping transmission when the signal-to-noise ratio falls below a threshold as taught by Jacobsmeier in the communications system of Marchetto so resources are not wasted when communication is not reliable.

Regarding claims 8 and 16, Marchetto teaches a two-way communications system between a paging base station (transceiver) and a mobile paging unit where a signal quality is measured at the receiver and compared with a threshold value to adjust the modulation scheme.

Marchetto fails to teach that the signal quality is compared with a no-transmission threshold where transmission is ceased if the signal quality value is less than the threshold value and the link adaptation is performed if the signal quality value exceeds the threshold value.

Jacobsmeier teaches an adaptive data rate device for transmitting data over fading communications channels where a STOP command is used to halt communications when the signal-to-noise ratio falls below a minimum threshold required for reliable communications (see column 18 lines 27-36).

It would have been obvious to one of ordinary skill in the art to use the teaching of stopping transmission when the signal-to-noise ratio falls below a threshold as taught by Jacobsmeier in the communications system of Marchetto so resources are not wasted when communication is not reliable.

Regarding claims 9 and 10, one of ordinary skill in the art would recognize that when communication is not reliable, the transmission system may be unstable and substantially zero throughput may occur at the receiver.

Regarding claim 11, Jacobsmeyer teaches that the threshold indicates a measure of the signal-to-noise ratio of the channel.

Regarding claims 12 and 17, Marchetto further discloses that the receiver stores a look-up table listing acceptable threshold values corresponding to each available constellation bit rate, a signal quality is measured at the receiver and the look-up table is searched in order to find an acceptable data rate for transmission where the modulation scheme is adjusted based on the data rate selected (see column 5 lines 11-53).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marchetto et al.

Marchetto teaches a digital communications system having an automatically selectable transmission rate as described above, but fails to expressly teach that each of the at least one link adaptation modes is a link adaptation mode supported by the Enhanced Data Rates for GSM Evolution (EDGE) specification.

However, it would have been obvious to one of ordinary skill in the art to adapt the adaptation modes of Marchetto to be supported by the EDGE specification so data communications can be established in an EDGE system while extending battery life as less time and energy are wasted demodulating unacceptable signals.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**


**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

7/23/02

David B. Lugo  
Patent Examiner

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**